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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/576,480

04/21/2006

Akira Inoue

MAT-8841US

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52473

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RATNERPRESTIA

P.O. BOX 980

VALLEY FORGE, PA 19482

EXAMINER

BERTHEAUD, PETER JOHN

ART UNIT

PAPER NUMBER

3746

MAIL DATE

DELIVERY MODE

06/09/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/576,480	Applicant(s) INOUE ET AL.	
	Examiner PETER J. BERTHEAUD	Art Unit 3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/21/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Harper 5,496,156.

Harper discloses a compressor comprising: a compression element for compressing refrigerant gas; a hermetic container 10 for accommodating the compression element; and a suction pipe 55 linking inside and outside the hermetic container 10, wherein the compression element comprises: a cylinder 42; a piston 67 which reciprocates inside the cylinder 42; a compression chamber formed in the cylinder 42; and a suction muffler 80 whose one end leads to the compression chamber, the suction muffler 80 comprising: a muffling space 104, 112; an intake port (see hole at narrow end of 102) opened to the hermetic container and leading to the muffling space; and a gas catcher (102) surrounding the intake port and opened facing an orifice of the suction pipe 55, and wherein a lower end of an opening of the gas catcher (102) is located at a position lower than a lower end of the orifice of the suction pipe 55 (see configuration in Fig. 1); wherein an angle between a horizontal line and a shortest line connecting the lower end of the opening of the gas catcher (102) and the lower end of

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the orifice of the suction pipe is not less than 30° (again, see the configuration in Fig. 1, the angle is clearly more than 30 degrees).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art (AAPA) in view of Harper 5,496,156.

AAPA (Figs. 7 and 8 of present application) discloses a compressor comprising: a compression element for compressing refrigerant gas; a hermetic container 1 for accommodating the compression element; and a suction pipe 28 linking inside and outside the hermetic container 1, wherein the compression element comprises: a cylinder 6; a piston 8 which reciprocates inside the cylinder; a compression chamber 9 formed in the cylinder; and a suction muffler 30 whose one end leads to the compression chamber, the suction muffler comprising: a main body forming a muffling space 32; an intake port 36 opened to the hermetic container and leading to the muffling space 32; and a gas catcher 38 surrounding the intake port 36 and opened facing an orifice of the suction pipe 28; wherein the intake port 36 of the suction muffler is opened downward. However, AAPA does not teach the following claimed limitations taught by Harper.

Harper teaches a compressor comprising: a compression element for compressing refrigerant gas; a hermetic container 10 for accommodating the compression element; and a suction pipe 55 linking inside and outside the hermetic container 10, wherein the compression element comprises: a cylinder 42; a piston 67 which reciprocates inside the cylinder 42; a compression chamber formed in the cylinder 42; and a suction muffler 80 whose one end leads to the compression chamber, the suction muffler 80 comprising: a main body 96, 94 forming a muffling space 104, 112; an intake port (see hole at narrow end of 102) opened to the hermetic container and leading to the muffling space; and a gas catcher (102) surrounding the intake port and opened facing an orifice of the suction pipe 55, and wherein a lower end of an opening of the gas catcher (102) is located at a position lower than a lower end of the orifice of the suction pipe 55 (see configuration in Fig. 1); wherein an angle between a horizontal line and a shortest line connecting the lower end of the opening of the gas catcher (102) and the lower end of the orifice of the suction pipe is not less than 30° (again, see the configuration in Fig. 1, the angle is clearly more than 30 degrees).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have modified the muffler assembly of AAPA by implementing a gas catcher opening with a lower end being lower than the suction pipe, as taught by Harper, in order to allow a majority of the incoming refrigerant fluid to enter the muffler (Harper, col. 4, lines 15-24).

Furthermore, AAPA in view of Harper discloses the general conditions of the claimed invention except for the specific disclosure of a volume of the gas catcher being

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not less than 40% of a volume of the compression chamber. It would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the gas catcher with this parameter, since the claimed values are merely an optimum or workable range. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art (*In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) see MPEP 2144.05 II - Optimization of Ranges).

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art (AAPA) in view of Harper 5,496,156, and in further view of Lee 5,288,212.

AAPA in view of Harper discloses the invention as discussed above. However, AAPA in view of Harper does not teach the following claimed limitations taught by Lee.

Lee (Figs. 7 and 8) teaches a compressor assembly comprising: a muffler 50, a suction pipe 41, a muffling space 52a, and a gas catcher 52b. Lee further teaches an inner face of the gas catcher being concavely curved (see how wall of chamber 52b is concavely curved in Fig. 7).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have modified the muffler assembly of AAPA in view of Harper by implementing a concavely curved inner face on the gas catcher, as taught by Lee, in order to more quickly and easily direct the working fluid to the muffling space.

Conclusion

6. The prior art made of record in the attached form 892 and not relied upon is considered pertinent to applicant's disclosure.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to PETER J. BERTHEAUD whose telephone number is (571)272-3476. The examiner can normally be reached on M-F 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571) 272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Devon C Kramer/
Supervisory Patent Examiner, Art
Unit 3746

PJB
/Peter J Bertheaud/
Examiner, Art Unit 3746